

STATE OF NEW HAMPSHIRE

INTER-DEPARTMENT COMMUNICATION

DATE: January 11, 2022

FROM: Andrew O'Sullivan
Wetlands Program Manager

AT (OFFICE): Department of
Transportation

SUBJECT Dredge & Fill Application
Sandwich, 41134

TO Karl Benedict, Public Works Permitting Officer
New Hampshire Wetlands Bureau
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095

**Bureau of
Environment**

Forwarded herewith is the application package prepared by NH DOT District 3 for the subject major impact project. This project is classified as major Env-Wt 408.01 Projects in a Priority Resource Area. The project consists of replacing two 15" failed corrugated metal pipes that equalize water elevation of the wetlands located north and south of the roadway with two 15" reinforced concrete pipes.

This project was reviewed at the Natural Resource Agency Coordination Meeting on December 15, 2021. A copy of the minutes has been included with this application package. A copy of this application and plans can be accessed on the Departments website via the following link: <http://www.nh.gov/dot/org/projectdevelopment/environment/units/program-management/wetland-applications.htm>.

NHDOT anticipates and request that this project be reviewed and permitted by the Army Corp of Engineers through the State Programmatic General Permit process. A copy of the application has been sent to the Army Corp of Engineers.

Mitigation was determined to not be required as the proposed work was determined to be self-mitigating.

The lead people to contact for this project are Samantha Fifield, District 3 (524-6667 or Samantha.D.Fifield@dot.nh.gov) or Andrew O'Sullivan, Wetlands Program Manager, Bureau of Environment (271-3226 or Andrew.O'Sullivan@dot.nh.gov).

A payment voucher has been processed for this application (Voucher #668101) in the amount of \$400.00.

If and when this application meets with the approval of the Bureau, please send the permit directly to Andrew O'Sullivan, Wetlands Program Manager, Bureau of Environment.

AMO:amo

cc:

BOE Original

Town of Sandwich (4 copies via certified mail)

David Trubey, NH Division of Historic Resources (Cultural Review Within)

Carol Henderson, NH Fish & Game (via electronic notification)

Maria Tur, US Fish & Wildlife (via electronic notification)

Beth Alafat & Jeanie Brochi, US Environmental Protection Agency (via electronic notification)

Michael Hicks & Rick Kristoff, US Army Corp of Engineers (via electronic notification)

Kevin Nyhan, BOE (via electronic notification)

\\dot.state.nh.us\data\Environment\PROJECTS\SANDWICH\2021-M302-1\Wetlands\Application Submission Documents\WETAPP - Coverletter_Sandwich.doc



**STANDARD DREDGE AND FILL
WETLANDS PERMIT APPLICATION**
Water Division/Land Resources Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A/Env-Wt 100-900

APPLICANT'S NAME: NH Department of Transportation **TOWN NAME:** Sandwich

| | | | |
|-------------------------------|-------------------------------|-------------------------------|------------|
| Administrative Use Only | Administrative Use Only | Administrative Use Only | File No.: |
| | | | Check No.: |
| | | | Amount: |
| | | | Initials: |

A person may request a waiver of the requirements in Rules Env-Wt 100-900 to accommodate situations where strict adherence to the requirements would not be in the best interest of the public or the environment but is still in compliance with RSA 482-A. A person may also request a waiver of the standards for existing dwellings over water pursuant to RSA 482-A:26, III(b). For more information, please consult the [Waiver Request Form](#).

SECTION 1 - REQUIRED PLANNING FOR ALL PROJECTS (Env-Wt 306.05; RSA 482-A:3, I(d)(2))

Please use the [Wetland Permit Planning Tool \(WPPT\)](#), the Natural Heritage Bureau (NHB) [DataCheck Tool](#), the [Aquatic Restoration Mapper](#), or other sources to assist in identifying key features such as: [priority resource areas \(PRAs\)](#), [protected species or habitats](#), coastal areas, designated rivers, or designated prime wetlands.

| | |
|---|---|
| Has the required planning been completed? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Does the property contain a PRA? If yes, provide the following information: | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <ul style="list-style-type: none"> Does the project qualify for an Impact Classification Adjustment (e.g. NH Fish and Game Department (NHF&G) and NHB agreement for a classification downgrade) or a Project-Type Exception (e.g. Maintenance or Statutory Permit-by-Notification (SPN) project)? See Env-Wt 407.02 and Env-Wt 407.04. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| <ul style="list-style-type: none"> Protected species or habitat? <ul style="list-style-type: none"> If yes, species or habitat name(s): <u>Blandings Turtle</u> NHB Project ID #: <u>NHB21-2146</u> | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <ul style="list-style-type: none"> Bog? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| <ul style="list-style-type: none"> Floodplain wetland contiguous to a tier 3 or higher watercourse? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <ul style="list-style-type: none"> Designated prime wetland or duly-established 100-foot buffer? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <ul style="list-style-type: none"> Sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Is the property within a Designated River corridor? If yes, provide the following information: | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| <ul style="list-style-type: none"> Name of Local River Management Advisory Committee (LAC): <input type="text"/> A copy of the application was sent to the LAC on Month: <input type="text"/> Day: <input type="text"/> Year: <input type="text"/> | |

lrn@des.nh.gov or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

www.des.nh.gov

| | |
|---|---|
| For dredging projects, is the subject property contaminated? • If yes, list contaminant: <input type="text"/> | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Is there potential to impact impaired waters, class A waters, or outstanding resource waters? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| For stream crossing projects, provide watershed size (see WPPT or Stream Stats): <input type="text" value="NA"/> | |
| SECTION 2 - PROJECT DESCRIPTION (Env-Wt 311.04(i)) | |
| Provide a brief description of the project and the purpose of the project, outlining the scope of work to be performed and whether impacts are temporary or permanent. DO NOT reply "See attached"; please use the space provided below. | |
| <p>Replace two failed 15" corrugated metal pipes that equalize the water elevation of the wetlands located north and south of the roadway with two 15" reinforced concrete pipe. The proposed pipes shall be the same (or near the same) length as the existing pipes.</p> <p>There is approximately 27" of vertical distance between the top of roadway and the pipes' inverts. And the existing metal pipes are submerged at all times causing the pipe material to deteriorated to the point that sinkholes have formed on NH Route 113. To prevent the pipes' failures from impacting the traveling public, steel sheets were placed over the pipes (the pavement over the pipes was removed, steel sheets were laid over the failed pipes, and then roadway materials and pavement was placed over the steel sheets).</p> <p>Due to the roadway's low profile, the proposed reinforced concrete pipes will be installed as shallow as the existing pipes. All project impacts will be temporary.</p> | |
| SECTION 3 - PROJECT LOCATION | |
| Separate wetland permit applications must be submitted for each municipality within which wetland impacts occur. | |
| ADDRESS: <input type="text" value="NH Route 113 - Beede Flats Road"/> | |
| TOWN/CITY: <input type="text" value="Sandwich"/> | |
| TAX MAP/BLOCK/LOT/UNIT: <input type="text" value="NHDOT ROW"/> | |
| US GEOLOGICAL SURVEY (USGS) TOPO MAP WATERBODY NAME: <input type="text"/> | |
| <input checked="" type="checkbox"/> N/A | |
| (Optional) LATITUDE/LONGITUDE in decimal degrees (to five decimal places): | |
| | <input type="text" value="43.84010278° North"/> |
| | <input type="text" value="71.37965833° West"/> |

SECTION 4 - APPLICANT (DESIRED PERMIT HOLDER) INFORMATION (Env-Wt 311.04(a))

If the applicant is a trust or a company, then complete with the trust or company information.

NAME: NH Department of Transportation, Samantha Fifield

MAILING ADDRESS: 2 Sawmill Road

TOWN/CITY: Gilford

STATE: NH

ZIP CODE: 03249

EMAIL ADDRESS: samantha.d.fifield@dot.nh.gov

FAX: 603-524-8027

PHONE: 603-524-6667

ELECTRONIC COMMUNICATION: By initialing here: SDF, I hereby authorize NHDES to communicate all matters relative to this application electronically.

SECTION 5 - AUTHORIZED AGENT INFORMATION (Env-Wt 311.04(c))

☒ N/A

LAST NAME, FIRST NAME, M.I.:

COMPANY NAME:

MAILING ADDRESS:

TOWN/CITY:

STATE:

ZIP CODE:

EMAIL ADDRESS:

FAX:

PHONE:

ELECTRONIC COMMUNICATION: By initialing here: , I hereby authorize NHDES to communicate all matters relative to this application electronically.

SECTION 6 - PROPERTY OWNER INFORMATION (IF DIFFERENT THAN APPLICANT) (Env-Wt 311.04(b))

If the owner is a trust or a company, then complete with the trust or company information.

☐ Same as applicant

NAME: NH Department of Transportation, Andrew O'Sullivan

MAILING ADDRESS: 7 Hazen Drive, PO Box 483

TOWN/CITY: Concord

STATE: NH

ZIP CODE: 03302

EMAIL ADDRESS: andrew.O'Sullivan@dot.nh.gov

FAX: 603-271-7199

PHONE: 603-271-3226

ELECTRONIC COMMUNICATION: By initialing here: AMO, I hereby authorize NHDES to communicate all matters relative to this application electronically.

SECTION 7 - RESOURCE-SPECIFIC CRITERIA ESTABLISHED IN Env-Wt 400, Env-Wt 500, Env-Wt 600, Env-Wt 700, OR Env-Wt 900 HAVE BEEN MET (Env-Wt 313.01(a)(3))

Describe how the resource-specific criteria have been met for each chapter listed above (please attach information about stream crossings, coastal resources, prime wetlands, or non-tidal wetlands and surface waters):

NH Route 113 bisects a large wetland at this crossing's location. The wetland located on the south side of the roadway has also been designated prime. Due to the roadway's shallow profile, stormwater does flood over the roadway (north to south) occasionally. There are several equalizing pipes crossing along this stretch of NH Route 113, of which this crossing is one of them. There is a stream crossing located approximately 100 LF west of this location and another crossing approximately 75 LF east of this crossing. The pipe to the east was replaced under an emergency permit in July of 2019, File No. 2019-02272.

Env-Wt 400: The site was delineated by Deidra Benjamin on 8/24/2021 in accordance with Env-Wt 406. This project will have temporary impact to a Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Seasonally Flooded/Saturated Wetland (PSS1E). Project classified as major under Env 408.01

Env-Wt 500: This project is applicable under a maintenance of public highway infrastructure under Env-Wt 527.

Env-Wt 600: N/A, this is not a project in coastal lands or tidal waters

Env-Wt 700: Prime Wetlands in the project area and all impacts are temporary

Env-Wt 900: N/A, this is not a stream crossing

SECTION 8 - AVOIDANCE AND MINIMIZATION

Impacts within wetland jurisdiction must be avoided to the maximum extent practicable (Env-Wt 313.03(a)).* Any project with unavoidable jurisdictional impacts must then be minimized as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization](#) and the [Wetlands Permitting: Avoidance, Minimization and Mitigation Fact Sheet](#). For minor or major projects, a functional assessment of all wetlands on the project site is required (Env-Wt 311.03(b)(10)).*

Please refer to the application checklist to ensure you have attached all documents related to avoidance and minimization, as well as functional assessment (where applicable). Use the [Avoidance and Minimization Checklist](#), the [Avoidance and Minimization Narrative](#), or your own avoidance and minimization narrative.

**See Env-Wt 311.03(b)(6) and Env-Wt 311.03(b)(10) for shoreline structure exemptions.*

SECTION 9 - MITIGATION REQUIREMENT (Env-Wt 311.02)

If unavoidable jurisdictional impacts require mitigation, a mitigation [pre-application meeting](#) must occur at least 30 days but not more than 90 days prior to submitting this Standard Dredge and Fill Permit Application.

Mitigation Pre-Application Meeting Date: Month: **12** Day: **15** Year: **2021**

☒ N/A - Mitigation is not required

SECTION 10 - THE PROJECT MEETS COMPENSATORY MITIGATION REQUIREMENTS (Env-Wt 313.01(a)(1)c)

Confirm that you have submitted a compensatory mitigation proposal that meets the requirements of Env-Wt 800 for all permanent unavoidable impacts that will remain after avoidance and minimization techniques have been exercised to the maximum extent practicable: ☐ I confirm submittal.

☒ N/A – Compensatory mitigation is not required

SECTION 11 - IMPACT AREA (Env-Wt 311.04(g))

For each jurisdictional area that will be/has been impacted, provide square feet (SF) and, if applicable, linear feet (LF) of impact, and note whether the impact is after-the-fact (ATF; i.e., work was started or completed without a permit).

For intermittent and ephemeral streams, the linear footage of impact is measured along the thread of the channel. *Please note, installation of a stream crossing in an ephemeral stream may be undertaken without a permit per Rule Env-Wt 309.02(d), however other dredge or fill impacts should be included below.*

For perennial streams/ivers, the linear footage of impact is calculated by summing the lengths of disturbances to the channel and banks.

Permanent impacts are impacts that will remain after the project is complete (e.g., changes in grade or surface materials).

Temporary impacts are impacts not intended to remain (and will be restored to pre-construction conditions) after the project is completed.

| JURISDICTIONAL AREA | | PERMANENT | | | TEMPORARY | | |
|---------------------|--|-----------|----|--------------------------|------------|----|--------------------------|
| | | SF | LF | ATF | SF | LF | ATF |
| Wetlands | Forested Wetland | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| | Scrub-shrub Wetland | | | <input type="checkbox"/> | 77.6 | | <input type="checkbox"/> |
| | Emergent Wetland | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| | Wet Meadow | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| | Vernal Pool | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| | Designated Prime Wetland | | | <input type="checkbox"/> | 88.4 | | <input type="checkbox"/> |
| | Duly-established 100-foot Prime Wetland Buffer | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| Surface Water | Intermittent / Ephemeral Stream | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| | Perennial Stream or River | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| | Lake / Pond | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| | Docking - Lake / Pond | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| | Docking - River | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| Banks | Bank - Intermittent Stream | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| | Bank - Perennial Stream / River | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| | Bank / Shoreline - Lake / Pond | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| Tidal | Tidal Waters | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| | Tidal Marsh | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| | Sand Dune | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| | Undeveloped Tidal Buffer Zone (TBZ) | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| | Previously-developed TBZ | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| | Docking - Tidal Water | | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| TOTAL | | | | | 166 | | |

SECTION 12 - APPLICATION FEE (RSA 482-A:3, I)

☒ **MINIMUM IMPACT FEE:** Flat fee of \$400.

☐ **NON-ENFORCEMENT RELATED, PUBLICLY-FUNDED AND SUPERVISED RESTORATION PROJECTS, REGARDLESS OF IMPACT CLASSIFICATION:** Flat fee of \$400 (refer to RSA 482-A:3, 1(c) for restrictions).

☐ **MINOR OR MAJOR IMPACT FEE:** Calculate using the table below:

| | | | | |
|--|--------|---|----------|---------|
| Permanent and temporary (non-docking): | 166 SF | × | \$0.40 = | \$ 66.4 |
| Seasonal docking structure: | SF | × | \$2.00 = | \$ |
| Permanent docking structure: | SF | × | \$4.00 = | \$ |
| Projects proposing shoreline structures (including docks) add \$400 = | | | | \$ |
| Total = | | | | \$ 66.4 |
| The application fee for minor or major impact is the above calculated total or \$400, whichever is greater = \$ 400 | | | | |

lrn@des.nh.gov or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

www.des.nh.gov

SECTION 13 - PROJECT CLASSIFICATION (Env-Wt 306.05)

Indicate the project classification.

☐ Minimum Impact Project☐ Minor Project☒ Major Project**SECTION 14 - REQUIRED CERTIFICATIONS (Env-Wt 311.11)**

Initial each box below to certify:

Initials:

SDF

To the best of the signer's knowledge and belief, all required notifications have been provided.

Initials:

SDF

The information submitted on or with the application is true, complete, and not misleading to the best of the signer's knowledge and belief.

Initials:

SDF

The signer understands that:

- The submission of false, incomplete, or misleading information constitutes grounds for NHDES to:
 1. Deny the application.
 2. Revoke any approval that is granted based on the information.
 3. If the signer is a certified wetland scientist, licensed surveyor, or professional engineer licensed to practice in New Hampshire, refer the matter to the joint board of licensure and certification established by RSA 310-A:1.
- The signer is subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641.
- The signature shall constitute authorization for the municipal conservation commission and the Department to inspect the site of the proposed project, except for minimum impact forestry SPN projects and minimum impact trail projects, where the signature shall authorize only the Department to inspect the site pursuant to RSA 482-A:6, II.

Initials:

SDF

If the applicant is not the owner of the property, each property owner signature shall constitute certification by the signer that he or she is aware of the application being filed and does not object to the filing.

SECTION 15 - REQUIRED SIGNATURES (Env-Wt 311.04(d); Env-Wt 311.11)

SIGNATURE (OWNER):



PRINT NAME LEGIBLY:

Samantha D. Fifield

DATE:

Jan 6, 2022

SIGNATURE (APPLICANT, IF DIFFERENT FROM OWNER):

PRINT NAME LEGIBLY:

DATE:

SIGNATURE (AGENT, IF APPLICABLE):

PRINT NAME LEGIBLY:

DATE:

SECTION 16 - TOWN / CITY CLERK SIGNATURE (Env-Wt 311.04(f))

As required by RSA 482-A:3, I(a)(1), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

TOWN/CITY CLERK SIGNATURE:

PRINT NAME LEGIBLY:

Exempt, State Agency per RSA 482-A:31(a)(1)

TOWN/CITY:

DATE:

DIRECTIONS FOR TOWN/CITY CLERK:

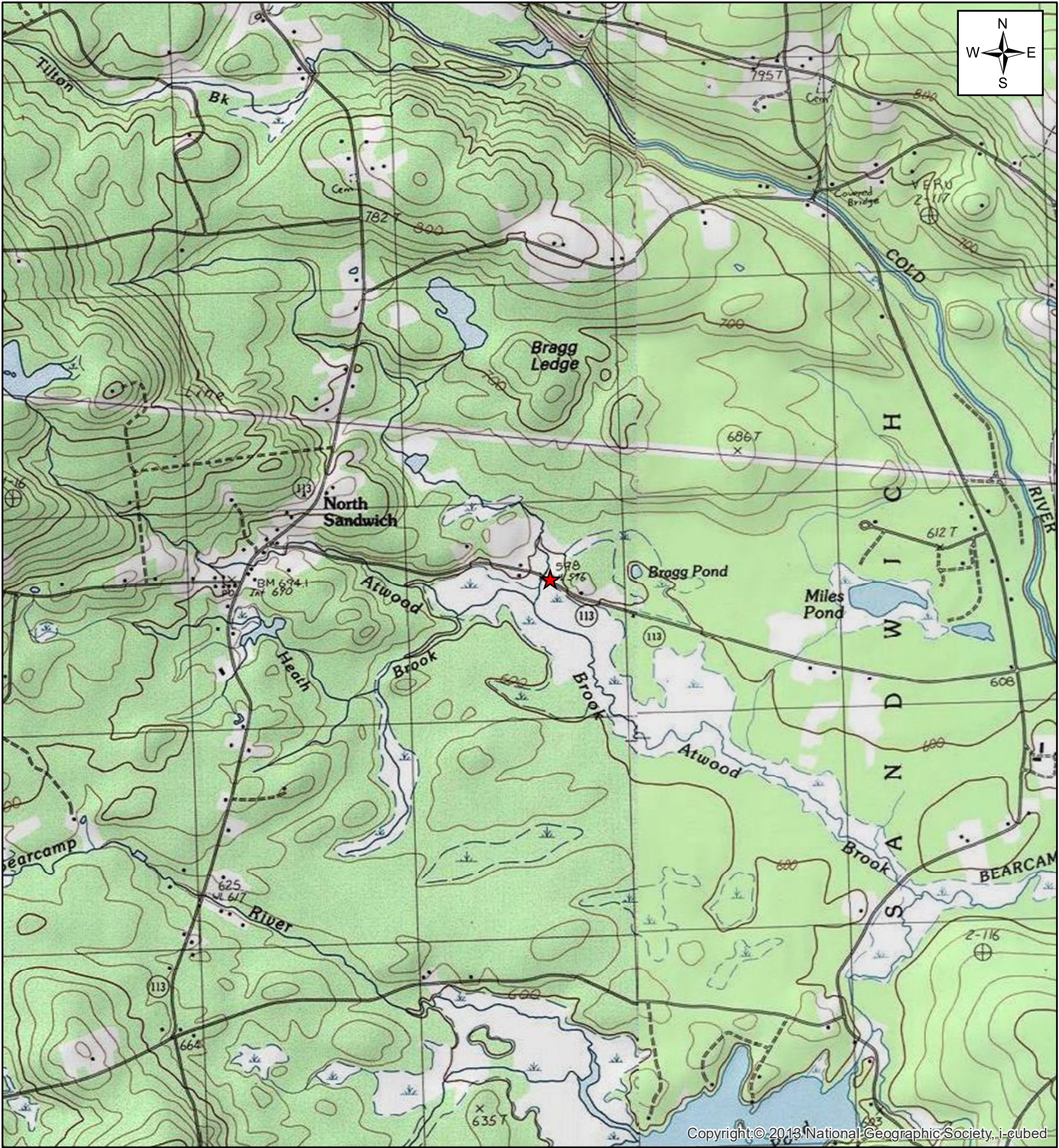
Per RSA 482-A:3, I(a)(1)

1. IMMEDIATELY sign the original application form and four copies in the signature space provided above.
2. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
3. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board.
4. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

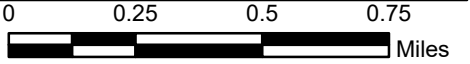
DIRECTIONS FOR APPLICANT:

Submit the original permit application form bearing the signature of the Town/City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery at the address at the bottom of this page. Make check or money order payable to "Treasurer – State of NH".

Sandwich, Project #2021-M302-1



Copyright © 2013 National Geographic Society, i-cubed



Map depicting culvert replacement in Sandwich. Work will include replacement of two failed 15" cmp.

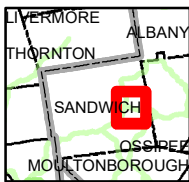
Map created by: Arin Mills on 6/23/2021

Source: S:\Environment\PROJECTS\SANDWICH\2021-M302-1

Legend

★ Project Location

1:24,000
New Hampshire
DOT
Department of Transportation





STANDARD DREDGE AND FILL WETLANDS PERMIT APPLICATION ATTACHMENT A: MINOR AND MAJOR PROJECTS



Water Division/Land Resources Management
Wetlands Bureau

[Check the Status of your Application](#)

RSA/ Rule: RSA 482-A/ Env-Wt 311.10; Env-Wt 313.01(a)(1); Env-Wt 313.03

APPLICANT'S NAME: NHDOT-District 3

TOWN NAME: Sandwich

Attachment A is required for *all minor and major projects*, and must be completed *in addition* to the [Avoidance and Minimization Narrative](#) or [Checklist](#) that is required by Env-Wt 307.11.

For projects involving construction or modification of non-tidal shoreline structures over areas of surface waters having an absence of wetland vegetation, only Sections I.X through I.XV are required to be completed.

PART I: AVOIDANCE AND MINIMIZATION

In accordance with Env-Wt 313.03(a), the Department shall not approve any alteration of any jurisdictional area unless the applicant demonstrates that the potential impacts to jurisdictional areas have been avoided to the maximum extent practicable and that any unavoidable impacts have been minimized, as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization](#).

SECTION I.I - ALTERNATIVES (Env-Wt 313.03(b)(1))

Describe how there is no practicable alternative that would have a less adverse impact on the area and environments under the Department's jurisdiction.

THIS PROJECT COULD HAVE BEEN CONSTRUCTED UNDER THE CULVERT MAINTAINER PROGRAM HAD THE WETLAND LOCATED ON THE SOUTH SIDE OF NH ROUTE 113 NOT BEEN DESIGNATED PRIME. THIS LOCATION IS NOT A STREAM CROSSING, THE EXISTING PIPES ALLOW FOR A CONNECTION BETWEEN THE WETLANDS LOCATED ON THE NORTH AND SOUTH SIDE OF THE ROADWAY. THE SCOPE OF WORK INCLUDES THE REPLACEMENT OF TWO FAILED 15-INCH CORRUGATED METAL PIPES WITH TWO 15-INCH REINFORCED CONCRETE PIPES. ALL RESOURCE IMPACTS WILL BE TEMPORARY

TO IMPROVE AQUATIC ORGANISM CROSSINGS, DISTRICT 3 EXPLORED REPLACING THIS DUAL PIPE CROSSING WITH A SINGLE REINFORCED CONCRETE CROSSING. MULTIPLE GEOMETRIES WERE LOOKED AT (CIRCULAR, OVAL, AND BOX) AND EACH GEOMETRY PRESENTED ISSUES WITH PIPE AVAILABILITY AND CONSTRUCTABILITY. BY FAR, THE LARGEST LIMITING ISSUE IS THE VERTICAL CLEARANCE BETWEEN THE GROUND ADJACENT TO THE ROADWAY AND THE TOP OF THE ROADWAY: 27 INCHES. FOR A TYPICAL 15" CULVERT CROSSING, 35" OF VERTICAL ROOM IS NEEDED. 27" OF VERTICAL CLEARANCE ONLY ALLOWS FOR 4" OF GRANULAR MATERIAL OVER THE PIPE: TYPICALLY 12" IS REQUIRED.

GIVEN THE VERTICAL CLEARANCE ISSUES, DISTRICT 3 ALSO LOOKED AT ELEVATING THE ROADWAY BY 12" TO ALLOW FOR A SINGLE LARGER CULVERT AND DETERMINED THAT APPROXIMATELY 600 LF OF ROADWAY WOULD HAVE TO BE ELEVATED. THIS OPTION WOULD REQUIRE APPROXIMATELY 1/2 AN ACRE OF PERMANENT IMPACTS TO THE WETLANDS LOCATED ON BOTH THE NORTH AND SOUTH SIDE OF THE ROADWAY. SO, THIS OPTION IS NOT ONLY COST PROHIBITED BUT IT WOULD PERMANENTLY IMPACT THE SOUTHERN PRIME WETLAND. THE BENEFIT OF A SINGLE LARGER CULVERT DOES NOT OUTWEIGH THE IMPACTS TO THE SOUTHERN PRIME WETLAND.

lrn@des.nh.gov or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

www.des.nh.gov

SECTION I.II - MARSHES (Env-Wt 313.03(b)(2))

Describe how the project avoids and minimizes impacts to tidal marshes and non-tidal marshes where documented to provide sources of nutrients for finfish, crustacean, shellfish, and wildlife of significant value.

This project does not impact a marsh.

SECTION I.III - HYDROLOGIC CONNECTION (Env-Wt 313.03(b)(3))

Describe how the project maintains hydrologic connections between adjacent wetland or stream systems.

The existing crossing, 2-15" corrugated metal pipes have failed. This project proposes to replace the failed pipes with 2-15" reinforced concrete pipes. The proposed concrete pipes shall be far more durable in comparison to the existing metal pipes. The pipes are typically partially underwater at all times at this location; ordinarily, there is approximately 4"-8" of freeboard at this crossing's location. The proposed pipes will be installed at or within a fraction of an inch of the existing pipes' inverts, so the connection shall be maintained between the wetlands located on the north and south side of the roadway.

SECTION I.IV - JURISDICTIONAL IMPACTS (Env-Wt 313.03(b)(4))

Describe how the project avoids and minimizes impacts to wetlands and other areas of jurisdiction under RSA 482-A, especially those in which there are exemplary natural communities, vernal pools, protected species and habitat, documented fisheries, and habitat and reproduction areas for species of concern, or any combination thereof.

All of this project's impacts are temporary and are associated with the replacement of two (failed) 15" corrugated metal pipes with two (proposed) 15" reinforced concrete pipes. Temporary impacts are for installation of erosion control measures during construction.

SECTION I.V - PUBLIC COMMERCE, NAVIGATION, OR RECREATION (Env-Wt 313.03(b)(5))

Describe how the project avoids and minimizes impacts that eliminate, depreciate or obstruct public commerce, navigation, or recreation.

The project proposed to replace two failed pipes, which has caused sink holes on NH Route 113. This project will eliminate impacts to the traveling public, and maintain the existing roadway.

SECTION I.VI - FLOODPLAIN WETLANDS (Env-Wt 313.03(b)(6))

Describe how the project avoids and minimizes impacts to floodplain wetlands that provide flood storage.

The project will not create permanent impacts to floodplain wetlands. All impacts are temporary for installation of erosion control measures.

SECTION I.VII - RIVERINE FORESTED WETLAND SYSTEMS AND SCRUB-SHRUB – MARSH COMPLEXES (Env-Wt 313.03(b)(7))

Describe how the project avoids and minimizes impacts to natural riverine forested wetland systems and scrub-shrub – marsh complexes of high ecological integrity.

This project does not impact a riverine forest. Impacts to scrub-shrub marsh of high ecological integrity have been minimized by placement of the proposed concrete pipes in the same location as the existing. All impacts are temporary and have been minimized to areas needed for installation of erosion control measures during construction.

SECTION I.VIII - DRINKING WATER SUPPLY AND GROUNDWATER AQUIFER LEVELS (Env-Wt 313.03(b)(8))

Describe how the project avoids and minimizes impacts to wetlands that would be detrimental to adjacent drinking water supply and groundwater aquifer levels.

This project does not impact a drinking water supply or groundwater aquifer levels.

SECTION I.IX - STREAM CHANNELS (Env-Wt 313.03(b)(9))

Describe how the project avoids and minimizes adverse impacts to stream channels and the ability of such channels to handle runoff of waters.

This project is not a stream crossing, nor does it cause any adverse impacts to a stream channel.

SECTION I.X - SHORELINE STRUCTURES - CONSTRUCTION SURFACE AREA (Env-Wt 313.03(c)(1))

Describe how the project has been designed to use the minimum construction surface area over surface waters necessary to meet the stated purpose of the structures.

NA

SECTION I.XI - SHORELINE STRUCTURES - LEAST INTRUSIVE UPON PUBLIC TRUST (Env-Wt 313.03(c)(2))

Describe how the type of construction proposed is the least intrusive upon the public trust that will ensure safe docking on the frontage.

NA

SECTION I.XII - SHORELINE STRUCTURES – ABUTTING PROPERTIES (Env-Wt 313.03(c)(3))

Describe how the structures have been designed to avoid and minimize impacts on ability of abutting owners to use and enjoy their properties.

NA

SECTION I.XIII - SHORELINE STRUCTURES – COMMERCE AND RECREATION (Env-Wt 313.03(c)(4))

Describe how the structures have been designed to avoid and minimize impacts to the public's right to navigation, passage, and use of the resource for commerce and recreation.

NA

SECTION I.XIV - SHORELINE STRUCTURES – WATER QUALITY, AQUATIC VEGETATION, WILDLIFE AND FINFISH HABITAT (Env-Wt 313.03(c)(5))

Describe how the structures have been designed, located, and configured to avoid impacts to water quality, aquatic vegetation, and wildlife and finfish habitat.

NA

SECTION I.XV - SHORELINE STRUCTURES – VEGETATION REMOVAL, ACCESS POINTS, AND SHORELINE STABILITY (Env-Wt 313.03(c)(6))

Describe how the structures have been designed to avoid and minimize the removal of vegetation, the number of access points through wetlands or over the bank, and activities that may have an adverse effect on shoreline stability.

NA

PART II: FUNCTIONAL ASSESSMENT**REQUIREMENTS**

Ensure that project meets the requirements of Env-Wt 311.10 regarding functional assessment (Env-Wt 311.04(j); Env-Wt 311.10).

FUNCTIONAL ASSESSMENT METHOD USED:

US Army Corp of Engineers Highway Methodology; Wetlands Functions and Values

NAME OF CERTIFIED WETLAND SCIENTIST (FOR NON-TIDAL PROJECTS) OR QUALIFIED COASTAL PROFESSIONAL (FOR TIDAL PROJECTS) WHO COMPLETED THE ASSESSMENT: ARIN MILLS

DATE OF ASSESSMENT: 9/3/2021

Check this box to confirm that the application includes a NARRATIVE ON FUNCTIONAL ASSESSMENT:



For minor or major projects requiring a standard permit without mitigation, the applicant shall submit a wetland evaluation report that includes completed checklists and information demonstrating the RELATIVE FUNCTIONS AND VALUES OF EACH WETLAND EVALUATED. Check this box to confirm that the application includes this information, if applicable:



Note: The Wetlands Functional Assessment worksheet can be used to compile the information needed to meet functional assessment requirements.



AVOIDANCE AND MINIMIZATION CHECKLIST

Water Division/Land Resources Management Wetlands Bureau

[Check the Status of your Application](#)



RSA/Rule: RSA 482-A/ Env-Wt 311.07(c)

This checklist can be used in lieu of the written narrative required by Env-Wt 311.07(a) to demonstrate compliance with requirements for Avoidance and Minimization (A/M), pursuant to RSA 482-A:1 and Env-Wt 311.07(c).

For the construction or modification of non-tidal shoreline structures over areas of surface waters without wetland vegetation, complete only Sections 1, 2, and 4 (or the applicable sections in [Attachment A: Minor and Major Projects \(NHDES-W-06-013\)](#)).

The following definitions and abbreviations apply to this worksheet:

- “A/M BMPs” stands for [Wetlands Best Management Practice Techniques for Avoidance and Minimization](#) dated 2019, published by the New England Interstate Water Pollution Control Commission (Env-Wt 102.18).
- “Practicable” means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes (Env-Wt 103.62).

SECTION 1 - CONTACT/LOCATION INFORMATION

APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation

PROJECT STREET ADDRESS: NH Route 113

PROJECT TOWN: Sandwich

TAX MAP/LOT NUMBER: DOT ROW

SECTION 2 - PRIMARY PURPOSE OF THE PROJECT

| | | |
|---------------------|---|---|
| Env-Wt 311.07(b)(1) | Indicate whether the primary purpose of the project is to construct a water-access structure or requires access through wetlands to reach a buildable lot or the buildable portion thereof. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
|---------------------|---|---|

If you answered “no” to this question, describe the purpose of the “non-access” project type you have proposed:

The purpose of the project is to replace two deteriorated 15" corrugated metal (equalizing) pipes with two 15" reinforced concrete pipes. Under wet conditions, as is at this location, the proposed reinforced concrete pipes will be far more durable than existing corrugated metal pipes.

irm@des.nh.gov or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

www.des.nh.gov

SECTION 3 - A/M PROJECT DESIGN TECHNIQUES

Check the appropriate boxes below in order to demonstrate that these items have been considered in the planning of the project. Use N/A (not applicable) for each technique that is not applicable to your project.

| | | |
|---|---|---|
| Env-Wt 311.07(b)(2) | For any project that proposes new permanent impacts of more than one acre or that proposes new permanent impacts to a Priority Resource Area (PRA), or both, whether any other properties reasonably available to the applicant, whether already owned or controlled by the applicant or not, could be used to achieve the project's purpose without altering the functions and values of any jurisdictional area, in particular wetlands, streams, and PRAs. | <input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A |
| Env-Wt 311.07(b)(3) | Whether alternative designs or techniques, such as different layouts, construction sequencing, or alternative technologies could be used to avoid impacts to jurisdictional areas or their functions and values. | <input checked="" type="checkbox"/> Check <input type="checkbox"/> N/A |
| Env-Wt 311.07(b)(4) Env-Wt 311.10(c)(1) Env-Wt 311.10(c)(2) | The results of the functional assessment required by Env-Wt 311.03(b)(10) were used to select the location and design for the proposed project that has the least impact to wetland functions. | <input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A |
| Env-Wt 311.07(b)(4) Env-Wt 311.10(c)(3) | Where impacts to wetland functions are unavoidable, the proposed impacts are limited to the wetlands with the least valuable functions on the site while avoiding and minimizing impacts to the wetlands with the highest and most valuable functions. | <input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A |
| Env-Wt 313.01(c)(1) Env-Wt 313.01(c)(2) Env-Wt 313.03(b)(1) | No practicable alternative would reduce adverse impact on the area and environments under the department's jurisdiction and the project will not cause random or unnecessary destruction of wetlands. | <input checked="" type="checkbox"/> Check <input type="checkbox"/> N/A |
| Env-Wt 313.01(c)(3) | The project would not cause or contribute to the significant degradation of waters of the state or the loss of any PRAs. | <input checked="" type="checkbox"/> Check <input type="checkbox"/> N/A |
| Env-Wt 313.03(b)(3) Env-Wt 904.07(c)(8) | The project maintains hydrologic connectivity between adjacent wetlands or stream systems. | <input checked="" type="checkbox"/> Check <input type="checkbox"/> N/A |
| Env-Wt 311.10 A/M BMPs | Buildings and/or access are positioned away from high function wetlands or surface waters to avoid impact. | <input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A |
| Env-Wt 311.10 A/M BMPs | The project clusters structures to avoid wetland impacts. | <input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A |
| Env-Wt 311.10 A/M BMPs | The placement of roads and utility corridors avoids wetlands and their associated streams. | <input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A |
| A/M BMPs | The width of access roads or driveways is reduced to avoid and minimize impacts. Pullouts are incorporated in the design as needed. | <input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A |
| A/M BMPs | The project proposes bridges or spans instead of roads/driveways/trails with culverts. | <input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A |

irm@des.nh.gov or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

www.des.nh.gov

| | | |
|---|--|---|
| A/M BMPs | The project is designed to minimize the number and size of crossings, and crossings cross wetlands and/or streams at the narrowest point. | <input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A |
| Env-Wt 500 Env-Wt 600 Env-Wt 900 | Wetland and stream crossings include features that accommodate aquatic organism and wildlife passage. | <input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A |
| Env-Wt 900 | Stream crossings are sized to address hydraulic capacity and geomorphic compatibility. | <input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A |
| A/M BMPs | Disturbed areas are used for crossings wherever practicable, including existing roadways, paths, or trails upgraded with new culverts or bridges. | <input checked="" type="checkbox"/> Check <input type="checkbox"/> N/A |
| SECTION 4 - NON-TIDAL SHORELINE STRUCTURES | | |
| Env-Wt 313.03(c)(1) | The non-tidal shoreline structure has been designed to use the minimum construction surface area over surfaces waters necessary to meet the stated purpose of the structure. | <input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A |
| Env-Wt 313.03(c)(2) | The type of construction proposed for the non-tidal shoreline structure is the least intrusive upon the public trust that will ensure safe navigation and docking on the frontage. | <input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A |
| Env-Wt 313.03(c)(3) | The non-tidal shoreline structure has been designed to avoid and minimize impacts on the ability of abutting owners to use and enjoy their properties. | <input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A |
| Env-Wt 313.03(c)(4) | The non-tidal shoreline structure has been designed to avoid and minimize impacts to the public's right to navigation, passage, and use of the resource for commerce and recreation. | <input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A |
| Env-Wt 313.03(c)(5) | The non-tidal shoreline structure has been designed, located, and configured to avoid impacts to water quality, aquatic vegetation, and wildlife and finfish habitat. | <input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A |
| Env-Wt 313.03(c)(6) | The non-tidal shoreline structure has been designed to avoid and minimize the removal of vegetation, the number of access points through wetlands or over the bank, and activities that may have an adverse effect on shoreline stability. | <input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A |

December 15, 2021 Natural Resource Agency Meeting
Sandwich Culvert Replacement 2021-M302-1
Presenters: Samantha Fifield, Arin Mills

Arin Mills, NHDOT Senior Environmental Manager, and Samantha Fifield, District 3 Civil Engineer, presented on the proposed culvert replacement for two failed 15" corrugated metal pipes (CMP) under NH 113 (Beede Flats Road) in Sandwich. The pipes function as an equalizer for the large wetland complex, and does not carry stream flow. A USGS map depicting the project location was shown, with a large wetland complex surrounding the project which drains into Atwood Brook (to the south) and runs into the Bear Camp River, leading into the Cold River. An aerial image shows the project lies to the east of the stream crossing and is surrounded by undeveloped land and rural development. The project is adjacent to the Wyman Preserve, a Conservation Easement held by NH Audubon. Arin met with Phil Brown to determine any concerns and he mentioned the desire to maintain beaver in the wetland system and to continue coordination with NH Fish & Game for rare wildlife. Photos were shown of the site and the existing conditions. It was noted a steel plate was installed over the failed pipes (no impacts to wetlands) to maintain the travel way until a permit was issued and a pipe replacement could be completed.

Sam provided an overview of the project to include the replacement of two failed 15" CMP's that equalize the water elevation with two reinforced concrete pipes. The pipes will be approximately the same length as existing and constructed of concrete to avoid future pipe deterioration. It was explained that the proposed work could have been completed under the culvert maintainer program had it not been located adjacent to a prime wetland. Draft wetland impact plans were shown where ~ 78 sf of a palustrine scrub shrub (PSS) wetland is temporarily impacted on the north side of the roadway and ~ 88 sf of a prime wetland PSS is temporarily impacted on the south side of the roadway. All impacts are within the existing DOT prescriptive ROW, and to the east of the existing stream crossing. Sam further described the construction sequence to include the installation of a temporary sandbag cofferdam and sediment basins. Traffic will be restricted to single lane alternating and is anticipated to take 1-2 days to complete. Secondary erosion control measures, such as silt sock, will be placed around the sediment basins as they cannot be placed 20'+ from the wetland boundary due to space constraints.

Arin showed the National Wetlands Inventory (NWI) maps with adjacent PSS wetland to north/south, as well as adjacent 100-year floodplain. The Priority Resource Areas (PRA) identified are Peatland (bog), Floodplain wetland adjacent to Tier 3 stream and Prime Wetlands. A field review did not identify vegetation or soils consistent with a bog. No permanent impacts are proposed in the scrub-shrub swamp. A file review of the Prime wetlands report, from 1984, identified important elements of the wetland; the elements include flora and fauna, food chain production, aesthetics, recreation, educational opportunities and hydraulic value for floodwater retention. The proposed project will not negatively impact these values. The NHB file review (NHB21-2146) determined Smooth green snake and Blandings turtle. Coordination with NH Fish & Game requested additional light for turtle passage. The US Fish & Wildlife Service IPaC review predicted Northern long eared bat (NLEB) and Monarch butterfly

(candidate). A 4(d)-consistency letter was generated for the NLEB. Section 106 Cultural review is consistent with the programmatic agreement for culvert replacement.

Sam clarified that larger concrete culvert alternatives were considered, although none were suitable for this location, due to the limited clearance between the ground elevation next to the roadway and the top of the roadway (27 inches). At this location, a larger diameter concrete culvert will not allow for necessary roadway cover material, and precast box culvert manufacturers do not cast box culvert sizes small enough to maintain the existing roadway elevation. Sam also explained constructability issues associated with using a larger box culvert to construct a sunken concrete box. Sam also looked at raising the elevation of the roadway profile to allow for a larger culvert. This option is cost prohibited as it would require ~ 600 LF of roadway built up and would permanently impact approximately 1/2 acre of the wetlands located north and south of the roadway.

Karl B asked to confirm the proposed invert elevations were same as existing and Sam agreed that they would. It was asked if restoration of vegetation was proposed and Sam stated very little vegetation disturbance is proposed with installation of the cofferdam, and the project is anticipated to take approximately 1 day to complete. Karl confirmed the project classification is major under Env Wt-408.01, with no mitigation. He asked the functions and values assessment be summarized within the application to show no impacts functions and values of the prime wetland.

Carol H asked for clarification on the space between the pipes and the ability for turtle passage. Sam stated fill material is required along the length to maintain the structural integrity of the roadway. Carol said with the information provided the proposed project is reasonable and thanked Sam for the due diligence in researching alternatives. No further concerns as proposed. Mike H and Pete S had no comments.

Wetland Function-Value Evaluation Form

Total area of wetland N Human made? N Is wetland part of a wildlife corridor? Y or a "habitat island"? N
 Adjacent land use Conservation / undeveloped Distance to nearest roadway or other development within
 Dominant wetland systems present PEU1, PSS1E (NWI) (oelin) Contiguous undeveloped buffer zone present YES
 Is the wetland a separate hydraulic system? N If not, where does the wetland lie in the drainage basin? upper of Upper Bearcamp River (HUC12)
 How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Sandwich 2021-M862-1
 Latitude 43.84008 Longitude -71.37962
 Prepared by: A. Mills Date 9/3/21
 Wetland Impact:
 Type Temp Area 1166sf
 Evaluation based on:
 Office X Field X
 Corps manual wetland delineation completed? Y X N

| Function/Value | Suitability Y / N | Rationale (Reference #)* | Principal Function(s)/Value(s) | Comments |
|----------------------------------|----------------------|---|-----------------------------------|---|
| Groundwater Recharge/Discharge | Y | 1, 2, 4, 5, 7, 12, 15 | | lg wetland complex associated w/ stream. High quality natural wetland. |
| Floodflow Alteration | Y | 1, 5, 7, 8, 9, 10, 11, 13, 14, 17, 18 | X | very large (prime) wetland with ability to retain water during flood events. Dense native vegetation. |
| Fish and Shellfish Habitat | | 1, 4, 5, 8, 10, 14, 15, 17 | | Small stream through wetland, limited + varied depths. Diffuse channel w/in wetland. |
| Sediment/Toxicant Retention | Y | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 | X | associated with stream highly vegetated, ponding water present in wetland. uplands surrounding mixture of undeveloped + residential. |
| Nutrient Removal | Y | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 | X | Deep organic soils w/ dense native vegetation. Ponded water present. |
| Production Export | Y | 1, 2, 4, 5, 7, 8, 9, 10, 11, 12, 14 | | Birds and insects present, high + diverse vegetation w/ flowering plants throughout seasons. |
| Sediment/Shoreline Stabilization | Y | 3, 4, 6, 7, 9, 12, 13, 14, 15 | | high vegetation density w/ meandering stream. vegetation immediately adj. to stream. no signs of erosion. |
| Wildlife Habitat | Y | 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23 | X | road bisects wetland otherwise residential / undeveloped adj. protected conservation lands adj. high plant diversity. Bird boxes protected and present adj. within, Trailhead / Kiosk present. Dot large enough for boating, fish walk. |
| Recreation | Y | 1, 3, 4, 5, 6, 7, 10, 11 | X | road bisects wetland, existing walking path / observation platform nearby. Small parking area. |
| Educational/Scientific Value | Y | 1, 2, 3, 4, 5, 6, 7, 8, 11, 13, 15, 16 | Y | existing Kiosk / trail w/in wetland. open wetland with vast vicus diverse vegetation. Blanding turtle + green snake known. |
| Uniqueness/Heritage | Y | 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 24, 25, 26 | Y | existing viewing location w/ high diversity of vegetation limited residential dev adj. Road bisects. |
| Visual Quality/Aesthetics | Y | 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12 | | Blanding's turtle, smooth green snake known w/ habitat for species present. wetland is prime wetland. |
| Endangered Species Habitat | Y | 1, 7 | Y | wetland designated as Prime by Town of Sandwich, 1984. |
| Other | | | | |

* Refer to backup list of numbered considerations.

Notes: wetland delineation conducted on 8/24/21 in accordance with Army Corp Standards.

Memo

NH Natural Heritage Bureau NHB DataCheck Results Letter

Please note: portions of this document are confidential.

Maps and NHB record pages are confidential and should be redacted from public documents.

To: Arin Mills, NH Department of Transportation
John O. Morton Building
7 Hazen Drive
Concord, NH 03302-0483

From: Jessica Bouchard, NH Natural Heritage Bureau

Date: 6/29/2021 (valid until 06/29/2022)

Re: Review by NH Natural Heritage Bureau

Permits: NHDES - Wetland Standard Dredge & Fill - Major, USACE - General Permit

NHB ID: NHB21-2146

Town: Sandwich

Location: Culverts under NH 113

Description: The proposed project will replace two failing 15" culverts.

cc: Kim Tuttle

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments NHB: No Comments At This Time

F&G: If these are double 15" culverts we would like to see replacement with a significantly larger single culvert, RCP or CMP, to provide aquatic species passage opportunities for Blanding's turtles.

| Vertebrate species | State ¹ | Federal | Notes |
|---|--------------------|---------|--|
| Blanding's Turtle (<i>Emydoidea blandingii</i>) | E | -- | Contact the NH Fish & Game Dept (see below). |
| Smooth Green Snake (<i>Opheodrys vernalis</i>) | SC | -- | Contact the NH Fish & Game Dept (see below). |

¹Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

Mills, Arin

From: Tuttle, Kim
Sent: Wednesday, December 8, 2021 10:31 AM
To: Mills, Arin
Cc: Henderson, Carol
Subject: RE: Sandwich Culvert Replacement Wildlife Review, NHB21-2146

Hi Arin,

In a wetland low flow situation, you don't need to construct a natural bottom in a box culvert. They are embedded to the necessary depth and allowed to fill in with mud, etc. over time which usually happens very quickly.

Kim

From: Mills, Arin <Arin.J.Mills@dot.nh.gov>
Sent: Wednesday, December 8, 2021 10:27 AM
To: Tuttle, Kim <Kim.A.Tuttle@wildlife.nh.gov>
Subject: RE: Sandwich Culvert Replacement Wildlife Review, NHB21-2146

Kim, I did ask the engineer and below is what she provided:

Unfortunately, an 18" tall box is actually 24" tall, so cars would be running on the box itself. Boxes of that size aren't built to withstand traffic like that.

Also, manufacturers don't make boxes this small. The smallest dimension manufactured today is 24" so the structure would be 30" tall. The next thought is to sink the structure to give it a "natural bottom". The problem is that the culvert is so small a natural bottom isn't really constructible.

So, between the small size and inherent the roadway's low profile, the only thing that really can be put in is the 15" pipe.

I also looked at raising the profile of the roadway to accommodate a taller structure. Approximately 600 LF of roadway profile would have to be adjusted to raise the road by a foot at this location. That would allow for the 24" tall structure, but it is a cost prohibited option that would require a seriously major permit and mitigation.

Hope this helps.

~ Arin

From: Tuttle, Kim <Kim.A.Tuttle@wildlife.nh.gov>
Sent: Wednesday, December 8, 2021 9:08 AM
To: Mills, Arin <Arin.J.Mills@dot.nh.gov>
Subject: RE: Sandwich Culvert Replacement Wildlife Review, NHB21-2146

Hi Arin,

Do you know why the engineer decided to not go with the single concrete box, approx. 3' by 18"? The single larger opening of a box culvert would allow more light into the culvert attracting more wildlife to enter.

Kim

From: Mills, Arin <Arin.J.Mills@dot.nh.gov>
Sent: Tuesday, December 7, 2021 1:30 PM
To: Tuttle, Kim <Kim.A.Tuttle@wildlife.nh.gov>
Subject: RE: Sandwich Culvert Replacement Wildlife Review, NHB21-2146

Hello Kim. The engineer has developed a plan for the site and has proposed to replace the existing pipes with two 15" concrete pipes in the current location. There will be ~ 4-8" of freeboard within the pipes under ordinary conditions. This project will be discussed at the upcoming Nat Res meeting on December 15th.

~ Arin

From: Tuttle, Kim <Kim.A.Tuttle@wildlife.nh.gov>
Sent: Wednesday, August 25, 2021 1:48 PM
To: Mills, Arin <Arin.J.Mills@dot.nh.gov>
Subject: RE: Sandwich Culvert Replacement Wildlife Review, NHB21-2146

Depends on how much 'freeboard' the engineer thinks there will be in ordinary conditions. For example, will it be a couple of inches or 6" or more?

From: Mills, Arin <Arin.J.Mills@dot.nh.gov>
Sent: Wednesday, August 25, 2021 1:43 PM
To: Tuttle, Kim <Kim.A.Tuttle@wildlife.nh.gov>
Cc: Doperalski, Melissa <Melissa.J.Doperalski@wildlife.nh.gov>
Subject: RE: Sandwich Culvert Replacement Wildlife Review, NHB21-2146

Kim,

It is likely this crossing, no matter the size, will be nearly submerged below the water due to the profile of the road (the road bisects the wetland). I can assume the box would be closed bottom and embedded. I can inquire with the engineer on a wider box, what size do you recommend for protection of the turtle?

~ Arin

From: Tuttle, Kim <Kim.A.Tuttle@wildlife.nh.gov>
Sent: Wednesday, August 25, 2021 1:38 PM
To: Mills, Arin <Arin.J.Mills@dot.nh.gov>
Cc: Doperalski, Melissa <Melissa.J.Doperalski@wildlife.nh.gov>
Subject: RE: Sandwich Culvert Replacement Wildlife Review, NHB21-2146

Going wider is an option too-

Kim

From: Mills, Arin <Arin.J.Mills@dot.nh.gov>
Sent: Wednesday, August 25, 2021 1:16 PM
To: Tuttle, Kim <Kim.A.Tuttle@wildlife.nh.gov>
Subject: Sandwich Culvert Replacement Wildlife Review, NHB21-2146

Hello Kim,

I am reaching out in regards to the above referenced NHB review for a culvert replacement project in Sandwich. I was able to visit the site yesterday and have attached some photos that may assist with your review.

The current design plan is to replace the twin 15" CMP's with a single concrete box, approx. 3' by 18". These pipes serve as equalizer pipes as the existing roadway bisects the wetland, and thus are continually submerged in water and subject to deterioration (rust). The replacement construction will be concrete to eliminate future deterioration, and will also allow for a wider (single) opening for turtles to pass. The low road profile limits the Department's options for sizing, and as I mentioned these pipes serve to equalize the water level on either side of the roadway.

You will see in the photos a break in the pavement at the crossing. These pipes are failing and the pavement was cut to allow for placement of a steel plate to allow the roadway to remain passable until the wetland permit can be obtained and work can be completed.

Can you please let me know if you have any additional questions or concerns for the project?

Arin Mills
Senior Environmental Manager, Operations Management
NH Department of Transportation
Bureau of Environment
7 Hazen Drive, Concord, NH 03302
Ph: (603)271-0187
Arin.j.mills@dot.nh.gov



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>

In Reply Refer To:

November 30, 2021

Consultation Code: 05E1NE00-2022-SLI-0606

Event Code: 05E1NE00-2022-E-02075

Project Name: Sandwich, 2021-M302-1

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>;

<http://www.towerkill.com>; and

www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

[http://](http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html)

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2022-SLI-0606

Event Code: Some(05E1NE00-2022-E-02075)

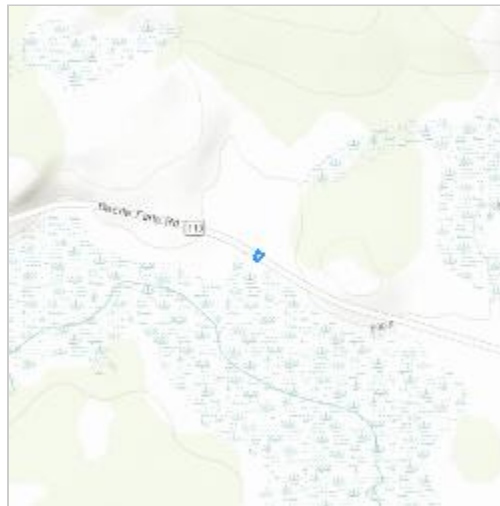
Project Name: Sandwich, 2021-M302-1

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: Work will include the replacement of two 15" corrugate metal pipe with a precast concrete box under NH 113.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.840075049999996,-71.37962477320362,14z>



Counties: Carroll County, New Hampshire

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

| NAME | STATUS |
|--|------------|
| Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 | Threatened |

Insects

| NAME | STATUS |
|--|-----------|
| Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743 | Candidate |

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>



IPaC Record Locator: 572-107836439

November 30, 2021

Subject: Consistency letter for the 'Sandwich, 2021-M302-1' project indicating that any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

Dear Arin Mills:

The U.S. Fish and Wildlife Service (Service) received on November 30, 2021 your effects determination for the 'Sandwich, 2021-M302-1' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. You indicated that no Federal agencies are involved in funding or authorizing this Action. This IPaC key assists users in determining whether a non-Federal action may cause “take”^[1] of the northern long-eared bat that is prohibited under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Please report to our office any changes to the information about the Action that you entered into IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation.

If your Action proceeds as described and no additional information about the Action’s effects on species protected under the ESA becomes available, no further coordination with the Service is required with respect to the northern long-eared bat.

The IPaC-assisted determination for the northern long-eared bat **does not** apply to the following ESA-protected species that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Candidate

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species listed above.

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

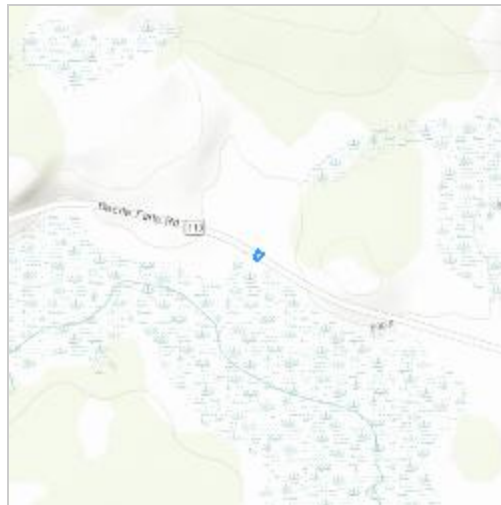
Sandwich, 2021-M302-1

2. Description

The following description was provided for the project 'Sandwich, 2021-M302-1':

Work will include the replacement of two 15” corrugate metal pipe with a precast concrete box under NH 113.

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.840075049999996,-71.37962477320362,14z>

**Determination Key Result**

This non-Federal Action may affect the northern long-eared bat; however, any take of this species that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o).

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on **May 15, 2017**. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for non-Federal actions is to assist determinations as to whether proposed actions are excepted from take prohibitions under the northern long-eared bat 4(d) rule.

If a non-Federal action may cause prohibited take of northern long-eared bats or other ESA-listed animal species, we recommend that you coordinate with the Service.

Determination Key Result

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?

No

2. Will your activity purposefully **Take** northern long-eared bats?

No

3. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?

Automatically answered

No

4. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

Yes

5. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?

No

6. Will the action involve Tree Removal?

No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

0

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0

Appendix B Certification – Activities with Minimal Potential to Cause Effects

Date Reviewed: 6/28/2021
(Desktop or Field Review Date)

☒ This Project uses only State funding; however project activities listed below comply with the PA.

Project Name: Sandwich Culvert Replacement

State Number: 2021-M302-1

FHWA Number: N/A

Environmental Contact: Arin Mills
Email Address: Arin.j.mills@dot.nh.gov

DOT Project Manager: Samantha Fifield

Project Description: Replacement of two failed 15" corrugated metal pipes with a precast concrete box which carries a prime wetland under NH 113.

Please select the applicable activity/activities:

| Highway and Roadway Improvements | |
|-------------------------------------|--|
| <input type="checkbox"/> | 1. Modernization and general highway maintenance <u>that may require additional highway right-of-way or easement</u> , including: Choose an item. Choose an item. |
| <input type="checkbox"/> | 2. Installation of rumble strips or rumble stripes |
| <input type="checkbox"/> | 3. Installation or replacement of pole-mounted signs |
| <input type="checkbox"/> | 4. Guardrail replacement, provided any extension does not connect to a bridge older than 50 years old (unless it does already), and there is no change in access associated with the extension |
| Bridge and Culvert Improvements | |
| <input checked="" type="checkbox"/> | 5. Culvert replacement (excluding stone box culverts), when the culvert is less than 60" in diameter and excavation for replacement is limited to previously disturbed areas |
| <input type="checkbox"/> | 6. Bridge deck preservation and replacement, as long as no character defining features are impacted |
| <input type="checkbox"/> | 7. Non-historic bridge and culvert maintenance, renovation, or total replacement, <u>that may require minor additional right-of-way or easement</u> , including: Choose an item. Choose an item. |
| <input type="checkbox"/> | 8. Historic bridge maintenance activities within the limits of existing right-of-way, including: Choose an item. Choose an item. |
| <input type="checkbox"/> | 9. Stream and/or slope stabilization and restoration activities (including removal of debris or sediment obstructing the natural waterway, or any non-invasive action to restore natural conditions) |
| Bicycle and Pedestrian Improvements | |
| <input type="checkbox"/> | 10. Construction of pedestrian walkways, sidewalks, sidewalk tip-downs, small passenger shelters, and alterations to facilities or vehicles in order to make them accessible for elderly and handicapped persons |
| <input type="checkbox"/> | 11. Installation of bicycle racks |
| <input type="checkbox"/> | 12. Recreational trail construction |
| <input type="checkbox"/> | 13. Recreational trail maintenance when done on existing alignment |
| <input type="checkbox"/> | 14. Construction of bicycle lanes and shared use paths and facilities within the existing right-of-way |
| Railroad Improvements | |
| <input type="checkbox"/> | 15. Modernization, maintenance, and safety improvements of railroad facilities within the existing railroad or highway right-of-way, <u>provided no historic railroad features are impacted</u> , including, but not limited to: |

Section 106 Programmatic Agreement – Cultural Resources Review Effect Finding

Appendix B Certification – Activities with Minimal Potential to Cause Effects

| | |
|---------------------------|--|
| | Choose an item. Choose an item. |
| <input type="checkbox"/> | 16. In-kind replacement of modern railroad features (i.e. those features that are less than 50 years old) |
| <input type="checkbox"/> | 17. Modernization/modification of railroad/roadway crossings provided that all work is undertaken within the limits of the roadway structure (edge of roadway fill to edge of roadway fill) and no associated character defining features are impacted |
| Other Improvements | |
| <input type="checkbox"/> | 18. Installation of Intelligent Transportation Systems |
| <input type="checkbox"/> | 19. Acquisition or renewal of scenic, conservation, habitat, or other land preservation easements where no construction will occur |
| <input type="checkbox"/> | 20. Rehabilitation or replacement of existing storm drains. |
| <input type="checkbox"/> | 21. Maintenance of stormwater treatment features and related infrastructure |

Please describe how this project is applicable under Appendix B of the Programmatic Agreement.


This project complies with the Section 106 Programmatic Agreement, Appendix B under 5. Culvert replacement (excluding stone box culverts), when the culvert is less than 60" in diameter and excavation for replacement is limited to previously disturbed areas.

Please submit this Certification Form along with the Transportation RPR, including photographs, USGS maps, design plans and as-built plans, if available, for review. Note: The RPR can be waived for in-house projects, please consult Cultural Resources Program Staff.

Coordination Efforts:

| | | | |
|---|----|---|---|
| Has an RPR been submitted to NHDOT for this project? | No | NHDHR R&C # assigned? | Click here to enter text. |
| Please identify public outreach effort contacts; method of outreach and date: | | Click here to enter text. | |

Finding: (To be filled out by NHDOT Cultural Resources Staff)

| | | | |
|---|--|--------------------------|--|
| <input checked="" type="checkbox"/> | No Potential to Cause Effects | <input type="checkbox"/> | No Historic Properties Affected |
| This finding serves as the Section 106 Memorandum of Effect. No further coordination is necessary. | | | |
| <input type="checkbox"/> | This project does <i>not</i> comply with Appendix B. Review will continue under Stipulation VII of the Programmatic Agreement. Please contact NHDOT Cultural Resources Staff to determine next steps. | | |
| <p>NHDOT comments:</p> <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 100px;"> <div style="text-align: center;">  <p>_____ NHDOT Cultural Resources Staff</p> </div> <div style="text-align: center;"> <p>6/28/2021</p> <p>_____ Date</p> </div> </div> | | | |

Section 106 Programmatic Agreement – Cultural Resources Review Effect Finding

Appendix B Certification – Activities with Minimal Potential to Cause Effects

Coordination of the Section 106 process should begin as early as possible in the planning phase of the project (undertaking) so as not to cause a delay.

Project sponsors should not predetermine a Section 106 finding under the assumption a project is limited to the activities listed in Appendix B until this form is signed by the NHDOT Bureau of Environment Cultural Resources Program staff.

Every project shall be coordinated with, and reviewed by the NHDOT-BOE Cultural Resources Program in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the New Hampshire State Historic Preservation Office, the Army Corps of Engineers, New England District, the Advisory Council on Historic Preservation, and the New Hampshire Department of Transportation Regarding the Federal Aid Highway Program in New Hampshire*. In accordance with the Advisory Council's regulations, we will continue to consult, as appropriate, as this project proceeds.

NHDOT and the State Historic Preservation Office may use provisions of the Programmatic Agreement to address the applicable requirements of NH RSA 227-C:9 in the location, identification, evaluation and management of historic resources, for projects funded by State funds.

If any portion of the project is not entirely limited to any one or a combination of the activities specified in Appendix B (with, or without the inclusion of any activities listed in Appendix A), please continue discussions with NHDOT Cultural Resources staff.

This No Potential to Cause Effect or No Historic Properties Affected project determination is your Section 106 finding, as defined in the Programmatic Agreement.

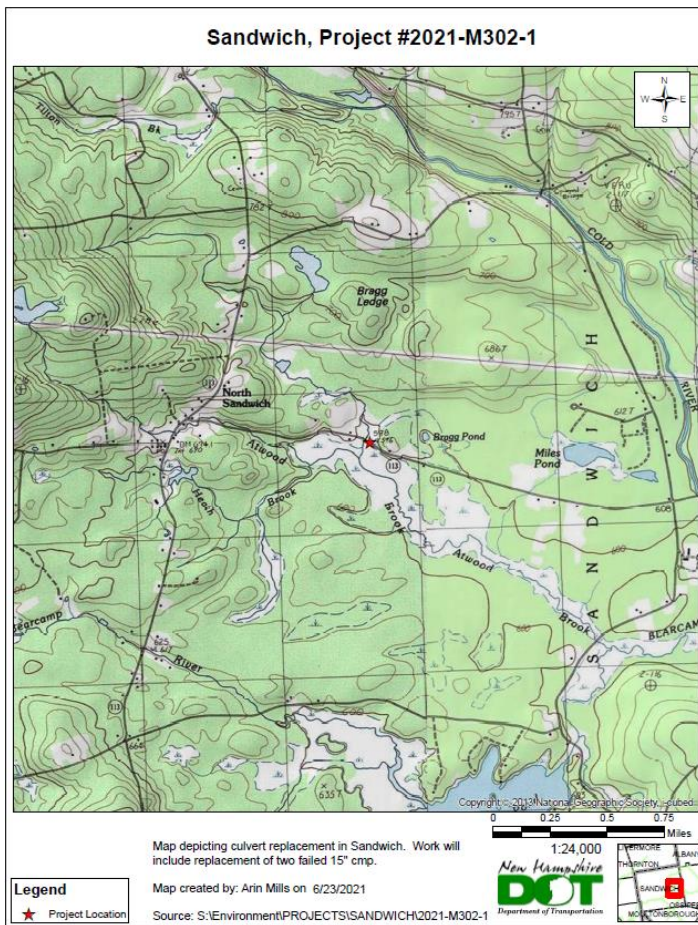
Should project plans change, please inform the NHDOT Cultural Resources staff in accordance with Stipulation VII of the Programmatic Agreement.

NHDOT BOE Cultural Resources Review

For the purpose of compliance with regulations of the National Historic Preservation Act, the Advisory Council on Historic Preservation's *Procedures for the Protection of Historic Properties* (36 CFR 800), the US Army Corps of Engineers' *Appendix C*, and/or state regulation RSA 227-C:9, *Directive for Cooperation in the Protection of Historic Resources*, the NHDOT Cultural Resources Program has reviewed the proposed project for potential impacts to historic properties.

Proposed Project: State funded project for replacement of two 15" cmp's with a concrete box along NH 113 in Sandwich. This project will require a standard wetland permit from DES as it is located within a Prime wetland and within a 100-year floodplain. We do not know the original construction date of the pipes.

<S:\Environment\PROJECTS\SANDWICH\2021-M302-1>





Above Ground Review

Known/approximate age of structure:

Proposed replacement of two 15" c/p's with a concrete box along NH 113 in Sandwich. The original construction date of the pipes is not known.

EMMIT was reviewed on 6/28/2021. There are no individually inventoried properties or historic districts associated with the project area or in the vicinity.

☒ **No Potential to Cause Effect/No Concerns**

This project complies with the Section 106 Programmatic Agreement, Appendix B under 5. Culvert replacement (excluding stone box culverts), when the culvert is less than 60" in diameter and excavation for replacement is limited to previously disturbed areas.

☐ Concerns:

Below Ground Review

Recorded Archaeological site: ☐ Yes ☒ No

Nearest Recorded Archaeological Site Name & Number: 27-CA-0198 Unnamed Cellar Hole

☐ Pre-Contact ☒ Post-Contact

Distance from Project Area: 7305 ft southwest of project area

☒ **No Potential to Cause Effect/No Concerns**

EMMIT was reviewed on 6/28/2021. There are no documented archeological site in or near the project area.

Arin Mills' cartographic review, relying on the 1930, 1931, 1940, 1945 and 1958 USGS Topographic Quadrangles, identified structures east and west of the pipe crossing on the north side of RT 113, but not immediately adjacent.

This replacement will largely be confined to previously disturbed areas associated with road, shoulder and pipe construction.

☐ Concerns:

Reviewed by:



6/28/2021

NHDOT Cultural Resources Staff

Date:



**US Army Corps
of Engineers®**
New England District

**New Hampshire General Permits (GPs)
Appendix B - Corps Secondary Impacts Checklist
(for inland wetland/waterway fill projects in New Hampshire)**

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to “work” include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See GC 5, regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

| 1. Impaired Waters | Yes | No |
|---|------------|-----------|
| 1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.* | | X |
| 2. Wetlands | Yes | No |
| 2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work? | X | |
| 2.2 Are there proposed impacts to SAS, special wetlands. Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) DataCheck Tool for information about resources located on the property at https://www2.des.state.nh.us/nhb_datacheck/ . The book Natural Community Systems of New Hampshire also contains specific information about the natural communities found in NH. | X | |
| 2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage? | X | |
| 2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.) | | X |
| 2.5 The overall project site is more than 40 acres? | | X |
| 2.6 What is the area of the previously filled wetlands? | | |
| 2.7 What is the area of the proposed fill in wetlands? | | |
| 2.8 What is the % of previously and proposed fill in wetlands to the overall project site? | | |
| 3. Wildlife | Yes | No |
| 3.1 Has the NHB & USFWS determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require an NHB ID number & a USFWS IPAC determination.) NHB DataCheck Tool: https://www2.des.state.nh.us/nhb_datacheck/ USFWS IPAC website: https://ecos.fws.gov/ipac/location/index | X | |

| | | |
|--|------------|-----------|
| 3.2 Would work occur in any area identified as either “Highest Ranked Habitat in N.H.” or “Highest Ranked Habitat in Ecological Region”? (These areas are colored magenta and green, respectively, on NH Fish and Game’s map, “2010 Highest Ranked Wildlife Habitat by Ecological Condition.”) Map information can be found at: • PDF: www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm . • Data Mapper: www.granit.unh.edu . • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html . | | X |
| 3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)? | | X |
| 3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development? | | X |
| 3.5 Are stream crossings designed in accordance with the GC 21? | N/A | |
| 4. Flooding/Floodplain Values | Yes | No |
| 4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream? | X | |
| 4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage? | | X |
| 5. Historic/Archaeological Resources | | |
| For a minimum, minor or major impact project - a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) with your DES file number shall be sent to the NH Division of Historical Resources as required on Page 11 GC 8(d) of the GP document** | X | |

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.

** If your project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.

2.1: Un-named stream to west. Proposed project is not in stream and replacement of an equalizer pipe.

2.2: Prime wetland to south. All impacts are temporary.

3.1: NHB determined Blanding's turtle and smooth green snake in vicinity. Double 15" CMP will be replaced with (2) 15" RCP. No change from existing conditions. IPAC 4(d) consistency letter for Northern long-eared bat.

4.1: Portions of work in 100-year floodplain. Replacement with same diameter pipes as existing and will not alter flood storage capabilities.

5.0: Project is consistent with Section 106 Programmatic Agreement. State funded and executed project.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Sandwich 2021-14302-1 City/County: Sandwich Sampling Date: 8-21-21
 Applicant/Owner: DBI State: VT Sampling Point: 1
 Investigator(s): A. Mills, D. Benjamin, K. Ryan Section, Township, Range: Sandwich
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): none Slope (%): N/A
 Subregion (LRR or MLRA): LPRR Lat: 43.840072 Long: -71.379633 Datum: State Plane
 Soil Map Unit Name: Monadnock and Berkshire Soils NWI classification: PSS1E / PEM1E
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.) High rain events
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|--|---|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | If yes, optional Wetland Site ID: _____ |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: (Explain alternative procedures here or in a separate report.) <u>High rain events during summer months</u> <u>Delineation Classification - PSS1E</u> | |

HYDROLOGY

| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of two required) |
|---|---|--|
| Primary Indicators (minimum of one is required; check all that apply) | | |
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) |
| | | <input type="checkbox"/> FAC-Neutral Test (D5) |
| Field Observations: | | |
| Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u> | | |
| Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u> | | |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ | | |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | |
| Remarks: | | |

VEGETATION – Use scientific names of plants.

Sampling Point: 1

| Tree Stratum (Plot size: <u>36'</u>) | | Absolute % Cover | Dominant Species? | Indicator Status |
|---------------------------------------|----------------------------------|------------------|-------------------|------------------|
| 1. | Red Maple (<i>Acer rubrum</i>) | <u>20</u> | <u>Y</u> | <u>FAC</u> |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |

| | | <u>20</u> | = Total Cover | |
|--|---|------------------|-------------------|------------------|
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | Absolute % Cover | Dominant Species? | Indicator Status |
| 1. | Am. Elm (<i>Ulmus americana</i>) | <u>15</u> | | <u>FACW</u> |
| 2. | Am. Elm | | | |
| 3. | Viburnum arrowwood (<i>Viburnum cassinii</i>) | <u>10</u> | <u>Y</u> | <u>FAC</u> |
| 4. | Silky Sycamore (<i>Cornus amomum</i>) | <u>15</u> | <u>Y</u> | <u>FACW</u> |
| 5. | Yellow Birch (<i>Betula alleghaniensis</i>) | <u>5</u> | | <u>FAC</u> |
| 6. | Winterberry (<i>Ilex verticillata</i>) | <u>5</u> | | <u>FACW</u> |
| 7. | | | | |
| | | <u>110/55/22</u> | <u>110</u> | = Total Cover |

| Herb Stratum (Plot size: <u>36'</u>) | | Absolute % Cover | Dominant Species? | Indicator Status |
|---------------------------------------|--|------------------|-------------------|------------------|
| 1. | Blue joint (<i>Calamagrostis canadensis</i>) | <u>100</u> | <u>Y</u> | <u>OBL</u> |
| 2. | Sensitive fern (<i>Certr. sensibillis</i>) | <u>8</u> | | <u>FACW</u> |
| 3. | Spiraea alba | <u>25</u> | <u>Y</u> | <u>FACW</u> |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| 12. | | | | |
| | | <u>133/66/23</u> | <u>133</u> | = Total Cover |

| Woody Vine Stratum (Plot size: <u>36'</u>) | | Absolute % Cover | Dominant Species? | Indicator Status |
|---|--|------------------|-------------------|------------------|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| | | | | = Total Cover |

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

| | |
|--------------------------------------|--------------------|
| Total % Cover of: | Multiply by: |
| OBL species <u>100</u> | x 1 = <u>100</u> |
| FACW species <u>98</u> | x 2 = <u>196</u> |
| FAC species <u>65</u> | x 3 = <u>195</u> |
| FACU species <u>0</u> | x 4 = <u>0</u> |
| UPL species <u>0</u> | x 5 = <u>0</u> |
| Column Totals: <u>263</u> | (A) <u>491</u> (B) |
| Prevalence Index = B/A = <u>1.86</u> | |

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☒ 3 - Prevalence Index is ≤3.0¹
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present?

Yes Y No

Remarks: (Include photo numbers here or on a separate sheet.)

no bog vegetation

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, |
| <input checked="" type="checkbox"/> Histic Epipedon (A2) | MLRA 149B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Redox (S5) | |
| <input type="checkbox"/> Stripped Matrix (S6) | |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) | |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Sandwich 0001-14300-1 City/County: Sandwich Sampling Date: 8-24-01
 Applicant/Owner: DOT State: VT Sampling Point: 2
 Investigator(s): A. Mills, D. Benjamin, & Ryan Section, Township, Range: Sandwich
 Landform (hillslope, terrace, etc.): Slope along road Local relief (concave, convex, none): _____ Slope (%): 30
 Subregion (LRR or MLRA): LRR R Lat: 43.840072 Long: -71.379133 Datum: State Plane
 Soil Map Unit Name: _____ NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes _____ No <u>X</u> | Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> |
| Hydric Soil Present? Yes _____ No <u>X</u> | |
| Wetland Hydrology Present? Yes _____ No <u>X</u> | |
| Remarks: (Explain alternative procedures here or in a separate report.) <u>High rain events during summer months</u> | |

HYDROLOGY

| Wetland Hydrology Indicators: | | Secondary Indicators (minimum of two required) | |
|--|---|--|--|
| Primary Indicators (minimum of one is required; check all that apply) | | | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) | |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) | <input type="checkbox"/> Moss Trim Lines (B16) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry-Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) | |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Microtopographic Relief (D4) | |
| | | <input type="checkbox"/> FAC-Neutral Test (D5) | |
| Field Observations: | | | |
| Surface Water Present? Yes _____ No <u>X</u> | Depth (inches): _____ | Wetland Hydrology Present? Yes _____ No <u>X</u> | |
| Water Table Present? Yes _____ No <u>X</u> | Depth (inches): _____ | | |
| Saturation Present? Yes _____ No <u>X</u> | Depth (inches): _____ (includes capillary fringe) | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | |
| Remarks: | | | |

VEGETATION – Use scientific names of plants.

Sampling Point: 2

| Tree Stratum (Plot size: <u>30'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | |
|---|------------------|--------------------------|------------------|--|
| 1. <u>White Pine (Pinus Strobus)</u> | <u>100</u> | <u>Y</u> | <u>FACU</u> | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B) |
| 2. <u>Am Beech (Fagus grandifolia)</u> | <u>25</u> | | <u>FACU</u> | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| | | <u>125</u> = Total Cover | | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | |
| 1. <u>Red Maple (Acer rubrum)</u> | <u>25</u> | <u>Y</u> | <u>FAC</u> | Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| | | <u>25</u> = Total Cover | | |
| Herb Stratum (Plot size: <u>5'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | |
| 1. <u>Bracken Fern (Pteridium aquilinum)</u> | <u>40</u> | <u>Y</u> | <u>FACU</u> | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| 2. <u>Am Beech (Fagus grandifolia)</u> | <u>3</u> | <u>Y</u> | <u>FACU</u> | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| | | <u>43</u> = Total Cover | | |
| Woody Vine Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status | |
| 1. _____ | | | | Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| | | _____ = Total Cover | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | | | | |

Hydrophytic Vegetation Present? Yes _____ No X

Sampling Point: 2

[illegible]²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- | | | |
|--|---|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) | <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> MLRA 149B) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) | <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) | <input type="checkbox"/> Dark Surface (S7) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B) |
| <input type="checkbox"/> Sandy Redox (S5) | | <input type="checkbox"/> Red Parent Material (F21) |
| <input type="checkbox"/> Stripped Matrix (S6) | | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) | | <input type="checkbox"/> Other (Explain in Remarks) |

Restrictive Layer (if observed):

Hydric Soil Present? Yes _____ No X

Hydric Soil Present? Yes _____ No X

Road shoulder rocky, prevent from digging over 1'



Photo 1: Looking East Down NH-113



Photo 2: Looking West Down NH-113

SANDWICH, Project #2021-M302-1



Photo 3: Looking North From NH-113



Photo 4: Looking NW Down NH-113

SANDWICH, Project #2021-M302-1



Photo 5: Looking South From NH-113



Photo 6: Looking SW Down NH-113

CONSTRUCTION SEQUENCE

As a preventative measure, sediment control measures, such as silt fence, compost sock, and hay bales, will be placed parallel to the roadway, between the proposed work area and designated wet areas ahead of all construction activities.

The installation of the two proposed 15" RCP pipes will take place during no flow conditions, which is primarily in the summer/early fall months. During no flow conditions, there is zero chance of flow overtopping the sand bag cofferdams. All sediment and erosion control measures will be installed, monitored, repaired or replaced as needed. These measures will not be removed until all impacted areas are stabilized. Work will be completed as detailed below:

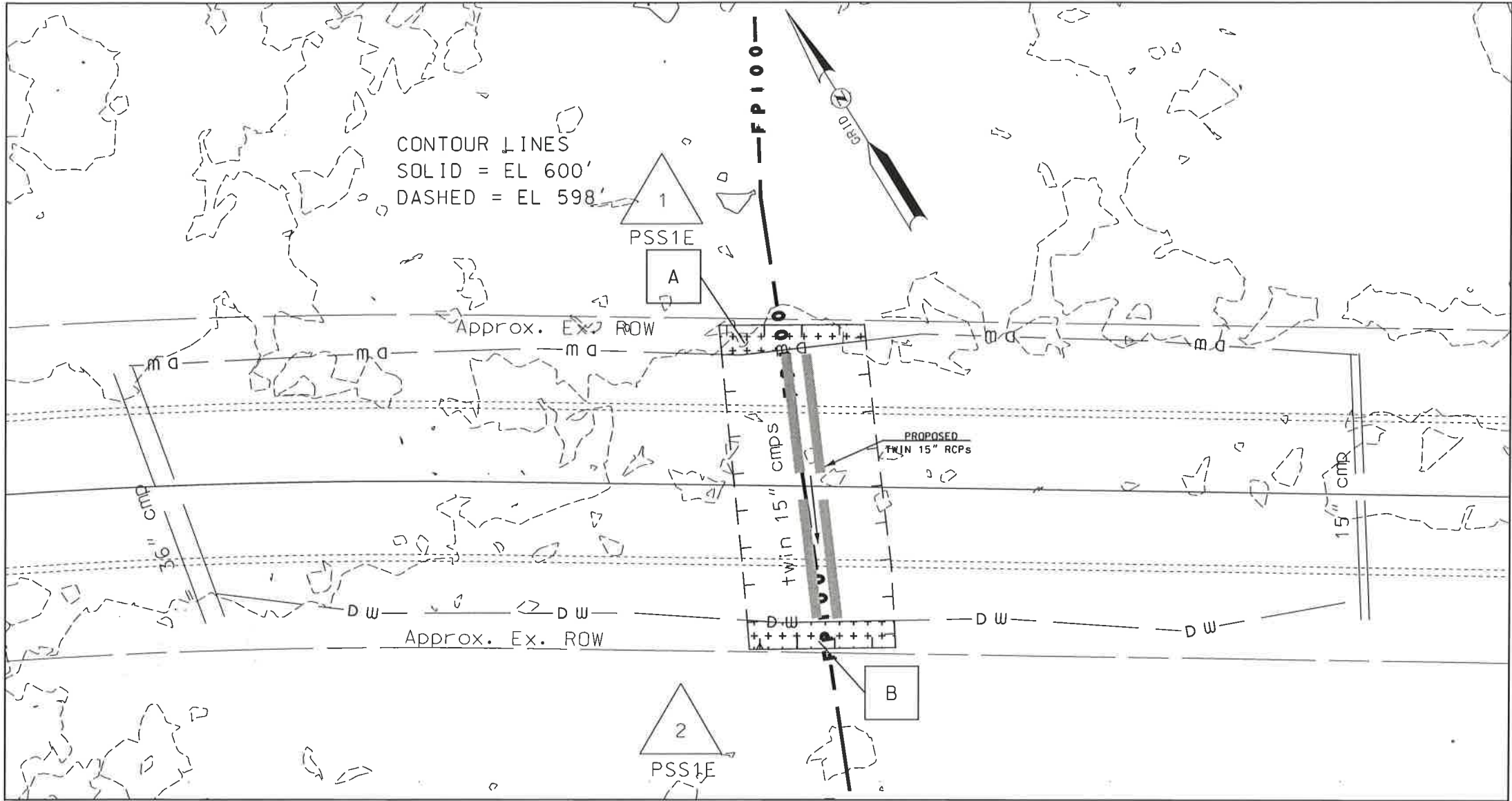
Install Culvert

The reinforced concrete pipes will be installed in two phases. It will be installed from the south to the north side of the roadway.

1. Install both the downstream and upstream perimeter control and turbidity barrier if needed to prevent sediment from entering the adjacent wetlands.
2. Install the downstream and upstream sandbag cofferdams; the cofferdams should be located within the temporary permitted areas.
3. Install the dewatering sump pump and connect it to a sediment basin located either on the north or south side of the roadway. The basin shall be located to maximize the distance to the wetlands located adjacent to the roadway. Due to site limitations, the sediment basin cannot be placed 20-feet away from the adjacent wetland; however, two layers of buffer perimeter controls will be placed between the sediment basin and adjacent wetland.
4. Connect the dewatering sump pump to the sediment basin and dewater the site confined within the two cofferdams.
5. Use alternating two-way traffic patterns with flaggers or temporary signals to maintain traffic over the north side of the roadway.
6. Construct the south side of the proposed culvert pipes.
7. Construct and compact the roadway materials located over the south side of the culverts.
8. Shift traffic to the south side of the roadway and continue to use alternating two-way traffic patterns with flaggers or temporary signals to maintain traffic over the south side of the culvert.
9. Construct the north side of the proposed culvert pipes.

10. Construct and compact the roadway materials located over the north side of the culverts.
11. Repave the roadway over the culverts.
12. Remove both the upstream and downstream cofferdams and turbidity curtains.
13. Once all permanent erosion control measures are established, remove the upstream and downstream temporary erosion control measures.

All erosion control measures, installed at the inception of the project, will be maintained until the site has returned to its original conditions.



LEGEND

| TYPE OF WETLAND IMPACT | SHADING/HATCHING | # | WETLAND DESIGNATION NUMBER |
|--|---------------------|---------------|----------------------------|
| NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND) | [Hatched Box] | # | WETLAND IMPACT LOCATION |
| NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND) | [Solid Box] | # | WETLAND MITIGATION AREA |
| TEMPORARY IMPACTS | [Cross-hatched Box] | [Hatched Box] | MITIGATION |

WETLAND IMPACT PLANS
DATE 12-01-2021

WETLANDS DELINEATED BY:
DEIDRA BENJAMIN
ON AUGUST 24, 2021



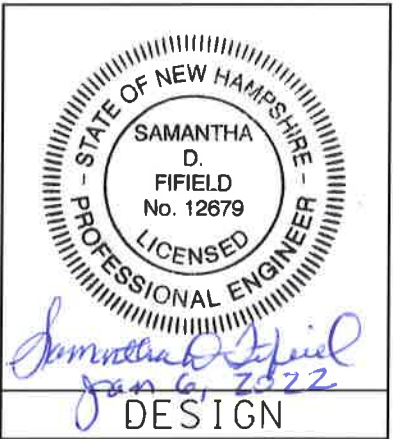
RIGHT-OF-WAY NOTE

ALL TEMPORARY IMPACTS
ARE LOCATED WITHIN
THE PRESCRIPTIVE
RIGHT-OF-WAY.

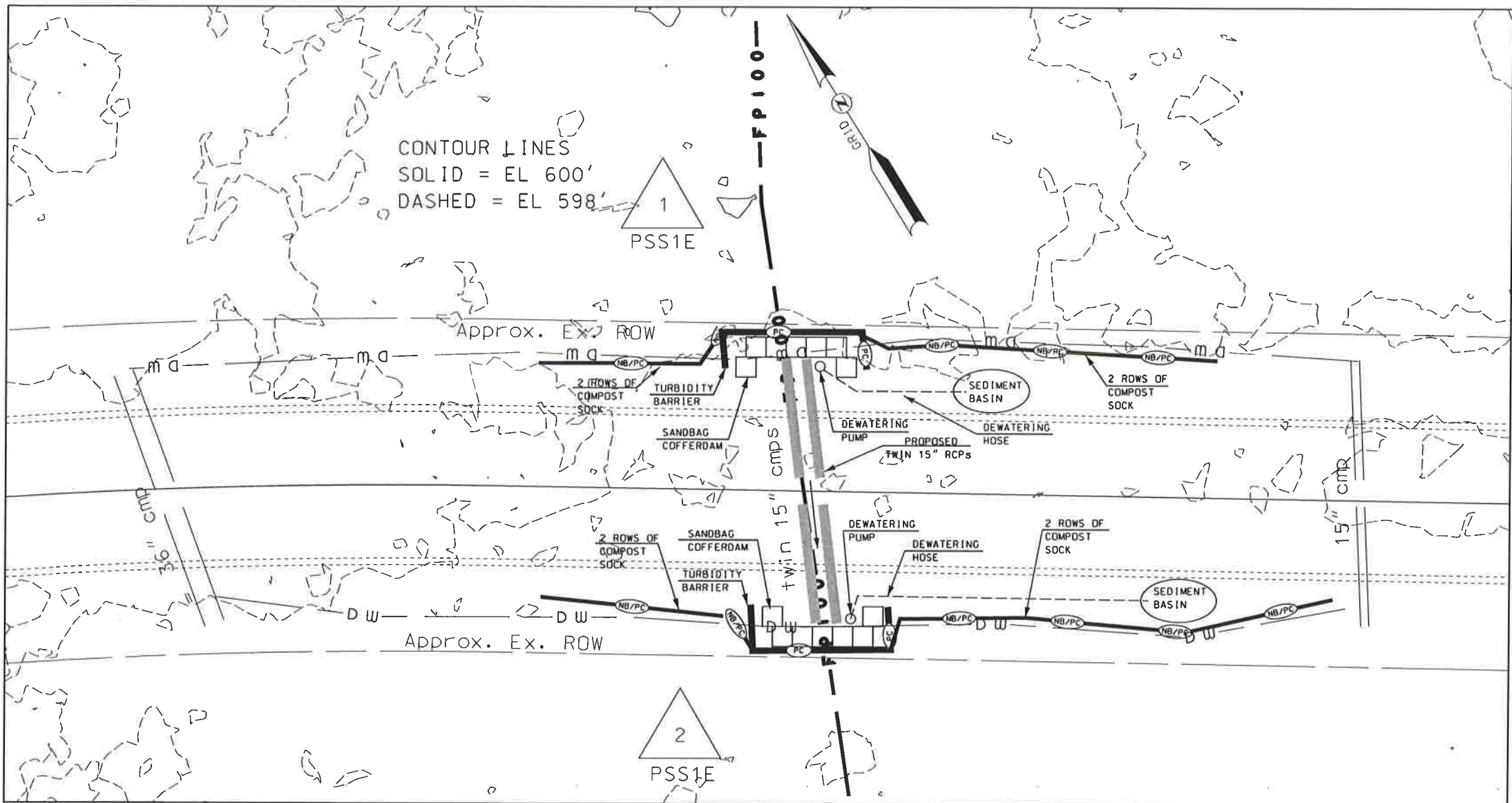
| WETLAND IMPACT SUMMARY | | | | | | | | | | | |
|------------------------|--------------------------------|----------|---------------------------|----|-------------------------------------|----|-----------|----|---|---------------|---------|
| WETLAND NUMBER | WETLAND CLASS- IFICATION | LOCATION | AREA IMPACTS | | | | | | LINEAR STREAM IMPACTS FOR MITIGATION | | |
| | | | PERMANENT | | | | TEMPORARY | | PERMANENT | | |
| | | | N.H.W.B. (NON-WETLAND) | | N.H.W.B. & A.C.O.E. (WETLAND) | | | | BANK LEFT | BANK RIGHT | CHANNEL |
| | | | SF | LF | SF | LF | SF | LF | LF | LF | LF |
| 1 | PSS1E | A | | | | | 77.6 | | | | |
| 2 | PSS1E(PRIME) | B | | | | | 88.4 | | | | |
| | | | | | | | | | | | |
| TOTAL | | | | | | | 166 | | | | |

PERMANENT IMPACTS: 0 SF
TEMPORARY IMPACTS: 166 SF

TOTAL IMPACTS: 166 SF



NH DEPARTMENT OF TRANSPORTATION
HIGHWAY MAINTENANCE DISTRICT 3
SANDWICH - NH ROUTE 113
REPLACEMENT OF FAILED TWIN 15" CMPs
(2021-M302-1)



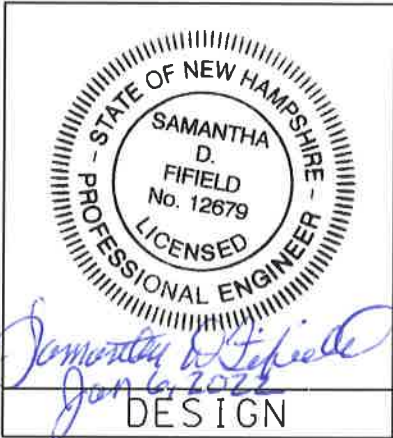
EROSION CONTROL PLANS
DATE 12-22-2021

WETLANDS DELINEATED BY:
DEIDRA BENJAMIN
ON AUGUST 24, 2021



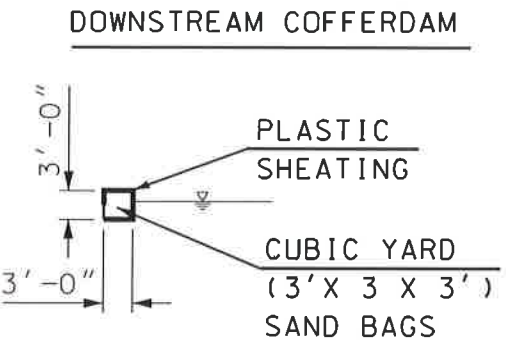
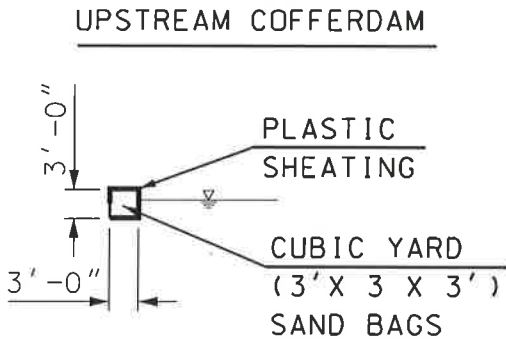
RIGHT-OF-WAY NOTE

ALL TEMPORARY IMPACTS
ARE LOCATED WITHIN
THE PRESCRIPTIVE
RIGHT-OF-WAY



NOTES:

- 1) DUE TO SITE CONSTRAINTS, SEDIMENT BASINS CANNOT BE PLACED A MINIMUM OF 20-FEET FROM THE DELINEATED WETLANDS. THE BASINS SHALL BE PLACED AS FAR AWAY FROM THE DELINEATED WETLAND AS PRACTICABLE.
- 2) A CLEAN WATER BYPASS IS NOT REQUIRED FOR PIPE REPLACEMENT; THIS IS NOT A STREAM CROSSING. THE PURPOSE OF THE PIPES IS TO PROVIDE WETLAND CONNECTIVITY.



| EROSION CONTROL PLAN LEGEND | |
|-----------------------------|--|
| PC | PERIMETER CONTROL SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM |
| NB/PC | NATURAL BUFFER/PERIMETER CONTROL SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM |
| CP | CHANNEL PROTECTION STONE CHECK DAMS STRAW WATTLES CHANNEL MATTING CLASS D EROSION STONE CLASS C STONE |
| CWB | CLEAN WATER BYPASS PUMP THROUGH PIPE DRAIN THROUGH PIPE OR CHANNEL |

NH DEPARTMENT OF TRANSPORTATION
HIGHWAY MAINTENANCE DISTRICT 3
SANDWICH - NH ROUTE 113
REPLACEMENT OF FAILED TWIN 15" CMPs
(2021-M302-1)

Priority Resource Area Determination
Sandwich Culvert Replacement, 2021-M302-1
Arin Mills, NHDOT Senior Environmental Manager

December 21, 2021

On August 24, 2021 NHDOT staff Deidra Benjamin (Environmental Coordinator, CWS), Kerry Ryan (Environmental Manager) and Arin Mills (Senior Environmental Manager) conducted a site visit of the project area along NH-113 (Beede Flats Rd) to perform an initial site assessment, wetland delineation and Priority Resource Area (PRA) review. Based on the results of a desktop review of the NHDES Wetland Permit Planning Tool (WPPT) the project location is predicted to be in and adjacent to the following PRA as defined by Env-Wt 103.65: Prime wetlands, Bog (Peatland) and Floodplain Wetlands Adjacent to Tier 3 Stream. Figure 1 shows the PRA's in relation to the project location.

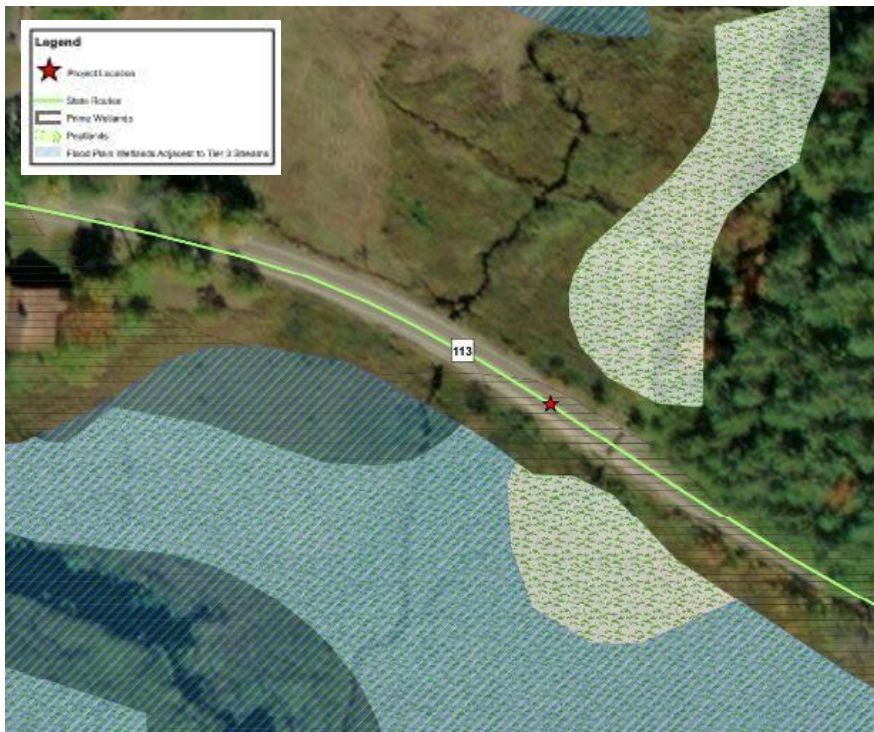


Figure 1

Bog

A “bog” as defined by Env-Wt 102.30 is defines as “a wetland distinguished by stunted evergreen trees and shrubs, peat deposits, poor drainage, highly acidic soil conditions, highly acidic water conditions, or any combination thereof...”. A wetland delineation was conducted in accordance with Env-Wt 406 by Deidra using the US Army Corp of Engineers Wetlands Delineation methodology for the area within and adjacent to the proposed project. The delineation evaluated the vegetative community, soils and hydrology were assessed using the Wetlands Determination Data Form. The data plot was located adjacent to the existing culvert on the

north side of NH-113. The wetland was classified as a Palustrine Scrub-Shrub Broad-Leaved Deciduous Seasonally Flooded/Saturated (PSS1E).

Dominant vegetation species identified within the plot are Red Maple (*Acer rubrum*), Viburnum arrowwood (*Viburnum recogintum*), Silky dogwood (*Cornus amomum*), Bluejoint (*Calamagrostis canadensis*) and Spirea (*Spirea alba*). According to the Natural Communities of New Hampshire, Published by UNH “*bogs refer to extremely acidic, heath shrub dominated peatlands with vegetation similar to raised, rain-fed bogs..... Lowland bogs have an abundance of dwarf to medium height shrubs such as leatherleaf, sheep laurel and rhodora and have few tall shrubs and trees.*” The species observed within and adjacent to the project area are not indicative of a bog habitat.

Floodplain Wetlands Adjacent to Tier 3 Stream

Atwood Brook, a Tier 3 stream, lies 350'+ to the south of the project area and is surrounded by an expansive shrub-shrub wetland. A FEMA Flood Zone 'A': 1% annual chance Flood Hazard associated with Atwood Brook lies in the western portion of the project area. All proposed impacts to the PSS1E wetland within the floodplain are temporary for installation of erosion control measures during construction. No permanent impacts to the PSS1E are proposed.

Prime Wetland

The Town of Sandwich has established Prime Wetlands (RSA 482-A:15) throughout town (B.H. Keith Associates, 1984) and the proposed project lies adjacent to 'Wetland No. 102- Atwood Brook Wetland'. The prime wetland report identifies “*Rich wetland flora and fauna, foodchain productivity, aesthetic, recreational, educational opportunities and the hydraulic values of this wetland complex make Atwood Brook on the most important wetlands in Sandwich.*”. The proposed replacement of two failed 15” Corrugated Metal Pipe (CMP) with two 15” Reinforced Concrete Pipe (RCP) project will not have a permanent negative impact to the identified values of the prime wetlands. The wetland values, to include flow and capacity (hydraulics), of the proposed pipes will function as they do today and will remain within the existing footprint. All impacts within the identified Prime wetland are temporary for installation of erosion control measures, and no net loss of wetlands is proposed.

A wetlands Functions-Value evaluation was conducted using the US Army Corp of Engineers Highway Methodology (USACE, 1993) on September 3, 2021. Based on both a field and desktop review it was determined the wetland exhibits the following principal functions; Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Wildlife Habitat, Recreation, Educational/Scientific Value, Uniqueness/Heritage, Visual Quality/Aesthetics and Endangered Species Habitat. The project, as proposed, will not have a permanent negative impact to these principal functions.

Protected Species

A project review was submitted to the NH Natural Heritage Bureau (NHB21-2146) for records of rare wildlife, plants and/or natural communities that are known to occur in or adjacent to the project area. It was determined Blandings turtle and Smooth Green snake are known to occur in or adjacent to the project area. Further review with NH Fish & Game requested a single larger concrete box to allow additional light, making it more attractive

to wildlife. DOT evaluated additional size and shape structures and determined a larger structure is not feasible at this location due to pipe availability and constructability. A larger structure would further require additional wetlands impact due to the low elevation of the roadway. Review at the December 15, 2021 Natural Resource Agency meeting determined due diligence of alternatives was conducted by DOT and no further concerns for the project, as proposed, were raised.

Conclusion

Evaluation has determined the accuracy and presence for Floodplain wetland adjacent to a Tier 3 stream and Prime wetlands within the project area. However, based on the definition and criteria for classification of a bog the Department has determined that there are no bogs present in within the project area and that the WPPT tool has inaccurately identified a bog in in the PRA layer for this area. All proposed impacts to these identified PRA's will be temporary for installation of erosion control measures, no permanent impacts will remain after construction. Impacts to the adjacent wetlands have been avoided and minimized to the greatest extent practicable. The project is classified as Major in accordance with Env-Wt 408.01. Compensatory Mitigation is not required per Env-Wt 800 as all proposed impacts are temporary.

Sources

B.H. Keith Associates. The Prime Wetlands of Sandwich, New Hampshire. 1984.

UNH Cooperative Extension. Natural Communities of New Hampshire, 2nd Edition. 2011.

US Army Corp of Engineers. Corps of Engineers Wetland Delineation Manual, Report Y-87-1. January 1987.

US Army Corp of Engineers. The Highway Methodology Workbook Supplement: Wetlands Functions and Values, A Descriptive Approach. October 1993.

Sandwich Culvert Replacement, DOT Project #2021-M302-1

December 21, 2021

A letter from the NH Department of Transportation was sent to the Town of Sandwich, to include the Conservation Commission, on November 17, 2021. To date, no response has been received from the town, to include the Conservation Commission.

Arin Mills
Bureau of Environment
NHDOT

All work within
DOT ROW

